Alstead, 2014

Developing Wetland-Specific Water Quality Standards

WWQSS
May 21, 2015
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Background

- Env-Wq 1700 does not include wetland-specific numeric biological criteria to assess the condition of wetlands.

- DES received an EPA Wetlands Program Development Grant in Oct 2011.

- A grant deliverable is the preparation of a plan to develop water quality standards for wetlands (due June 30, 2015).

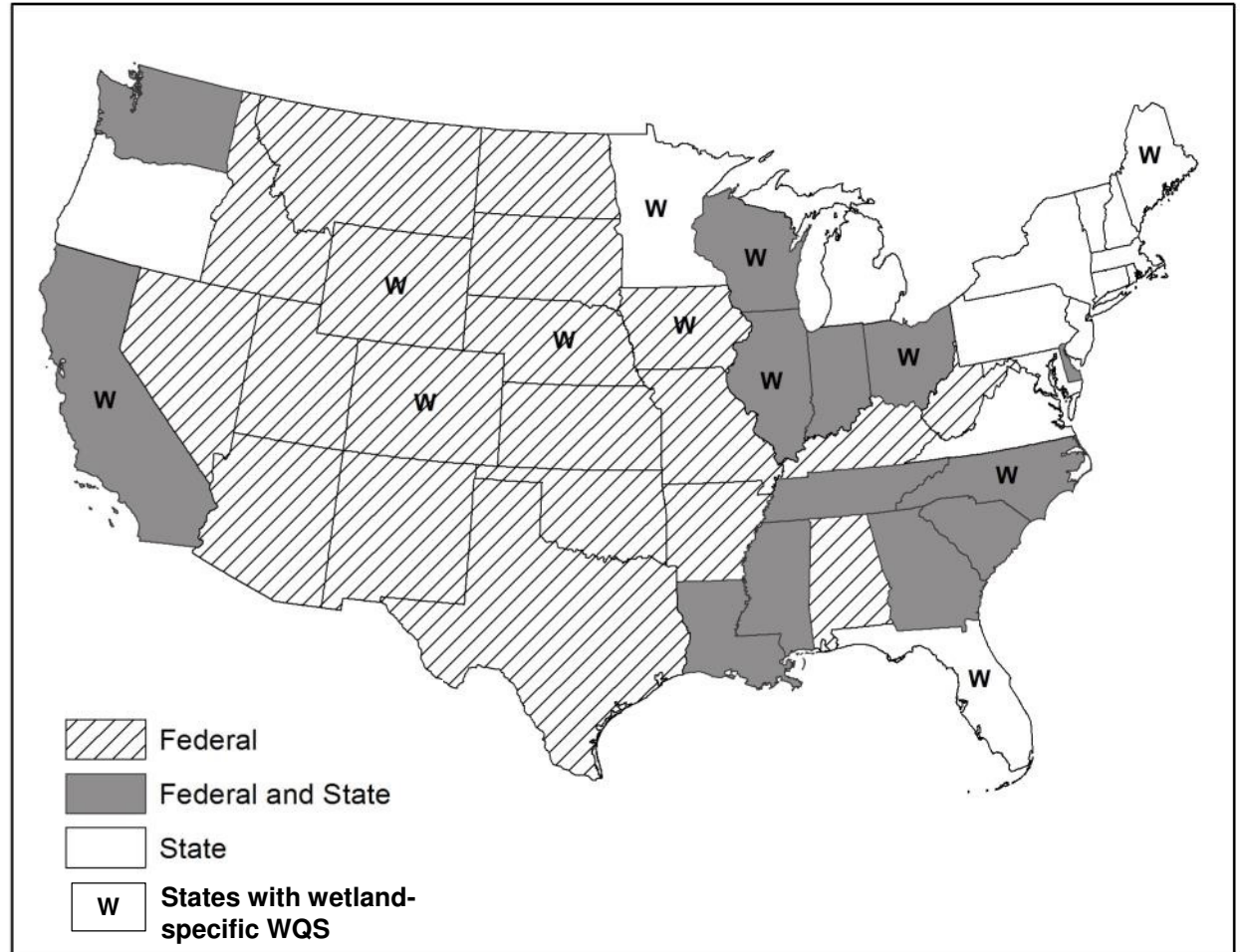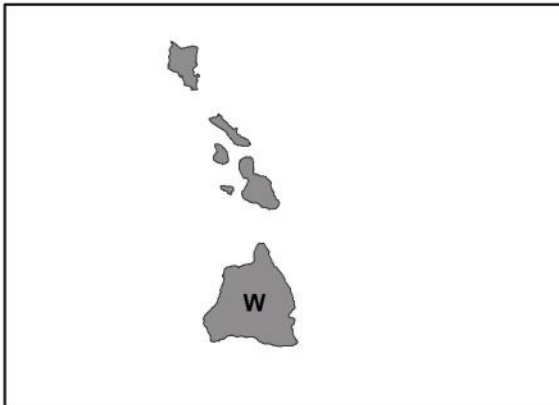Green's Grant 2014
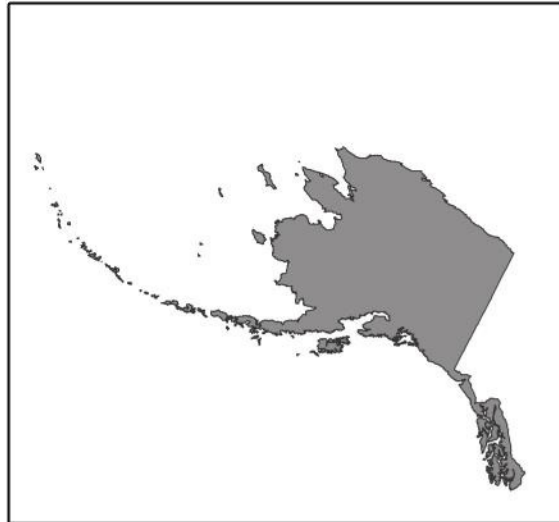
Information Reviewed

- State programs
  - Online, in person, by email and phone
- Environmental Law Institute
- Association of State Wetland Managers
- USEPA
  - Guidance
  - Workgroup to create a narrative criteria template for wetland water quality standards (underway)
- Scientific literature
  - Journal papers
  - Reviews
  - Reports

Marlow, 2014

Who has WWQS and what do they look like?

Legend:
- Federal (hatched)
- Federal and State (dark gray)
- State (white)
- **W** States with wetland-specific WQS

States Highlighted

- Maine
  - Biomonitoring of fringing wetlands
  - Aquatic life use – Macroinv & algae
  - Incorporate water quality issues into state permitting
- Minnesota
  - Biomonitoring of depressional wetlands
  - Aquatic life use – Macroinv & vegetation (FQA)
- Ohio
  - Permitting – ORAM and VIBI-FQ
  - Wetlands designated use
  - Mitigation success evaluation (VIBI-FQ and AmphIBI)

Wetland Mapping

- Extent of resource

- NWI maps from 1980s aerial imagery

- Most consistent spatially but outdated

  – Development

  – Natural succession

 – Technology

Water Quality Standards for Wetlands

- Three parts
  - Designated uses/classification
  - Criteria
  - Antidegradation

Wetlands as Waters Subject to WQS

- Ensure that water quality standards can be applied to wetlands (statute and rules).

  – Regulations (Env-Wq 1700) apply to wetlands included under "waters of U.S". Statute is not so clear.

  – Use work done by Paul Currier and WQSAC subcommittee (2010) for suggested changes to statute (RSA 485).

    - Definition of "water quality standards"

    - Definition of "waters of the U.S."
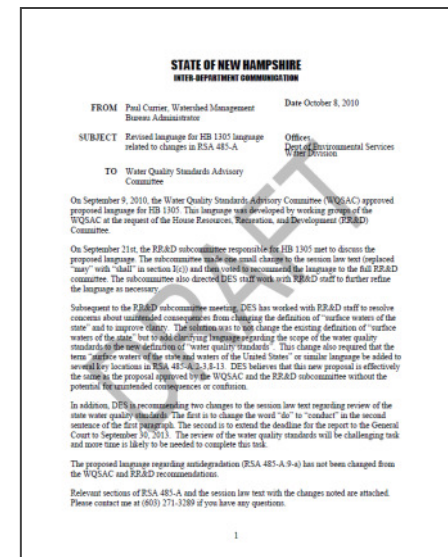
Designated Uses: Goals

- Designated use(s) for wetlands

  - Use work done by designated uses workgroup (2011).

  - Work is underway to add to rule (Env-Wq 1700) in 2016.

  - Public hearing on rules anticipated in fall 2015.

Designated Uses

Use Type	Proposed Designated Uses	Applicability
Recreation in and on the water	Swimming and Other Recreation in and on the Water	Applicable to All Surface Waters
	Fish Consumption	
	Shellfish Consumption	
Protection and Propagation of Fish, Shellfish, and Wildlife	Aquatic Life Integrity	
	Wildlife	
Public Water Supplies	Potential Drinking Water Supply After Adequate Treatment	Applicable to Some Surface Waters

Current Narrative Criteria for Wetland Assessment

Env-Wq 1703.02 Wetlands Criteria

(a) Subject to (b) below, wetlands shall be subject to the criteria listed in this part.

(b) Wherever the naturally occurring conditions of the wetlands are different from the criteria listed in these rules, the naturally occurring conditions shall be the applicable water quality criteria

Env-Wq 1703.19 Biological & Aquatic Community Integrity

(a) The surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.

(b) Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function.

Classification

- Classification

  - Two-tier system (Class A and B) has previously been identified as needing improvement.

  - Address in the future, if and when changes are considered for general surface waters.

Develop Numeric Biological Thresholds (1)

Initial focus on thresholds for:

- Open water wetlands (riverine, lacustrine, and palustrine emergent wetlands: (23-48%)

- Aquatic Life Use

- Indicators

  – Macroinvertebrates (where open water present)

  – Ecological Integrity Assessment

  – Floristic Quality Assessment or other vegetation metrics/indices

Riverine 0.52%
Marine 0.22%
Lacustrine 0.23%
Estuarine 2.78%
Palustrine nonvegetated 9.04%
Palustrine ScrubShrub 25.46%
Palustrine Aquatic Bed 0.07%
Palustrine Emergent 13.41%
Palustrine Forested 48.28%
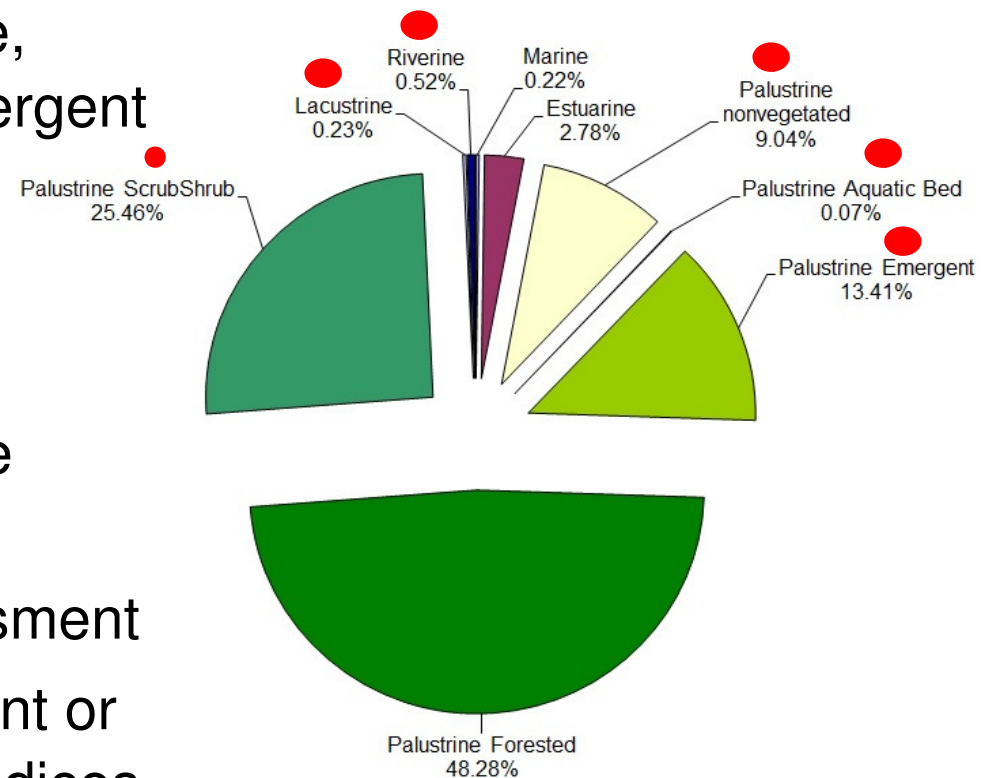
Develop Numeric Biological Thresholds (2)

- Continue monitoring wetlands for initial assemblages/indicators.

- Sample wetlands that represent a gradient of disturbance to enable the establishment of thresholds (numeric translations of narrative criteria).

- Establish interim thresholds for assessments.

New Boston, 2014

Antidegradation –
Outstanding Resource Waters

Currently limited to:

- Natural segments of designated rivers

- Waters within the White Mountain National Forest

- Should other waters/wetlands receive this protection/designation?

Green's Grant 2014

Interim Step – Baseline Wetlands Data

- RSA 485-A:12, III and IV regarding Water Quality Certifications (WQC) allow DES to include monitoring conditions to ensure water quality standards are met.

- Need guidance for collecting baseline wetlands data

- Not all WQCs will need baseline wetlands data – guidance should address this.

- Require WQC applicants to implement guidance once developed.

NWI Mapping

Seek funding to update NWI maps to:

- More accurately represent the resource,

- Facilitate ability to do probabilistic assessments in the future.

  – Not a substitute for sampling to assess individual wetlands.

NWIPlus Mapping

Examples of application of LLWW descriptors to nontidal wetlands.

Landscape position = LE – Lentic, TE – Terrene, LR – Lotic River, LS – Lotic Stream;

Landform = BA – Basin, FP – Floodplain, FR – Fringe, SL – Slope;

Water Flow Path = BI – Bidirectional-nontidal, IS – Isolated, OU – Outflow, TH – Throughflow;

Water body type: PD – Pond, LK – Lake, hw – headwater, and pd – pond-bordering wetland.

Note: Examples of how the code is used: TEBAIS—Terrene basin isolated; LSBATH—Lotic stream basin throughflow; and LEFRBI—Lentic fringe bidirectional-nontidal
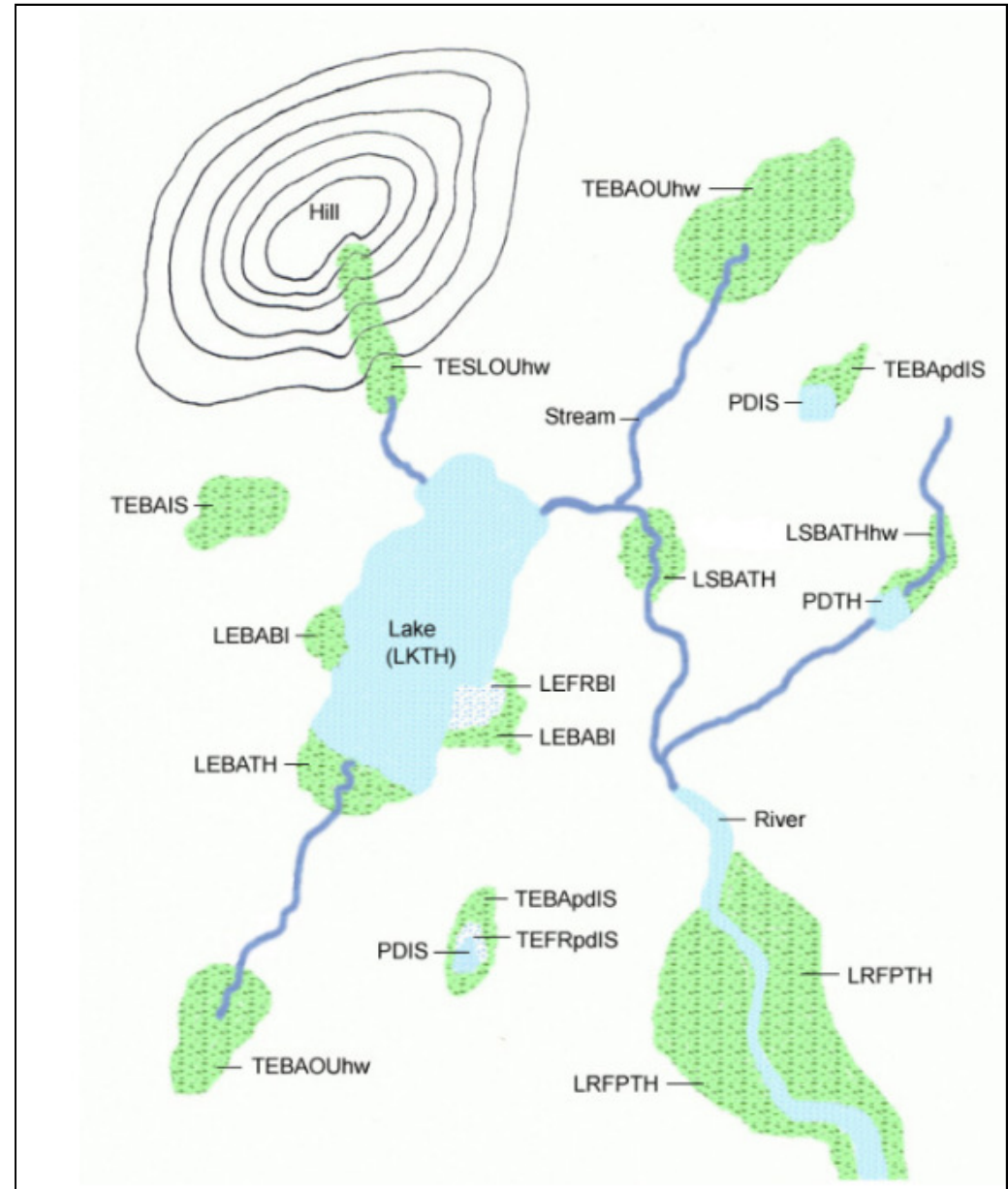
Summary (1)

Goal	Task Description	Participants	Timeframe
Clarify in statute that wetlands are addressed by surface waters definition	Amend 485-A to seek definitional changes to ensure coverage of wetlands by water quality standards (see Section 5.1)	Legislative change – seek sponsor in legislature	Within 5 years
Ensure designated use(s) include wetlands and are appropriate	Amend Env-Wq 1700 to include designated uses approved by the WQSAC in 2012. (see section 5.2)	DES, WWQSS, WQSAC and public	Within 2 - 5 years
Collect baseline data on potentially impacted wetlands in § 401 Water Quality Certification (see section 5.3.3)	Develop and implement guidance to collect baseline data on wetlands potentially impacted by projects that require § 401 Water Quality Certification (see section 5.3.3)	DES, WWQSS, WQSAC	Within 5 years

Summary (2)

Goal	Task Description	Participants	Timeframe
Inclusion of other waters as Outstanding Resource Waters (ORWs)	Determine interest, and if so, develop and begin implementation of process for nominating other surface waters – including wetlands – as ORWs in Env-Wq 1708.05(a). (see section 5.5)	DES, WWQSS, WQSAC	Within 5 - 10 years
Develop Numeric Thresholds for Aquatic Life in Wetlands with Open Water	Complete sampling of macroinvertebrates and vegetation; apply EIA, FQA and run macroinvertebrate data through Maine's model. Analyze data to develop indicator thresholds. (see section 5.3.2)	DES, NHB, Maine DEP; EPA for funding; WWQSS, WQSAC.	Within 5 - 10 years
Develop Numeric Thresholds for Aquatic Life or Wildlife in other Types of Wetlands	Develop numeric thresholds for aquatic life or wildlife in other types of wetlands with the next focus likely to be thresholds for wildlife support in palustrine forested wetlands. (see section 5.3.2)	DES, EPA for funding, NHB WWQSS, WQSAC and others to be determined	Beginning in approximately 5 years and continuing after that.

Summary (3)

Goal	Task Description	Participants	Timeframe
Use Thresholds for Assessments	Include defensible thresholds in the Consolidated Assessment and Listing Methodology and use for making assessments. (see section 5.3.2)	DES	Beginning in 5-10 years and continuing after that as new thresholds are developed.
Adopt numeric thresholds as criteria in Env-Wq 1700	Propose adoption into regulation (Env-Wq 1700) of defensible numeric thresholds that have included in the CALM and successfully used for assessments. (see section 5.3.2.)	DES, WWQSS, WQSAC and public	After thorough evaluation
Update wetlands mapping	Seek funding and update the NWI wetlands mapping. (see section 5.5)	DES, EPA	Within 5 - 10 years

Next Steps

- Obtain and review comments

- Incorporate comments

- Finalize and submit to EPA (by June 30, 2015)

Whitefield, 2014